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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,803	08/17/2006	Tsunenori Arai	081356-0266	2407
22428 7590 03/15/2010 FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007				
EXAMINER LIPTIZ, JEFFREY BRIAN				
ART UNIT		PAPER NUMBER		
3769				
MAIL DATE		DELIVERY MODE		
03/15/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/589,803

Applicant(s)

ARAI ET AL.

Examiner

JEFFREY B. LIPITZ

Art Unit

3769

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/17/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SI/08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Interval Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date 8/17/2006

DETAILED ACTION

Drawings

The drawings are objected to because Figures 2, 7 and 8 are not of sufficient quality to identify any features. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 8-12 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim must depend from a single claim. See MPEP

§ 608.01(n). **Accordingly, these claims have not been further treated on the merits.**

Claim 12 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim, or amend the claim to place the claim in proper dependent form, or rewrite the claim in independent form. This claim specifies a particular dye to be supplied by the means for supplying of claim 11. The particular dye does not further limit the structure of the invention, only the means by which dye is supplied impacts the structure.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 2, it is unclear what laser capable of tissue welding would NOT be capable of heating the vessel wall. How does this limitation further limit the scope of the claim?

Regarding claim 5, there are antecedent basis issues with all of the elements following the "means for" elements. For instance, the "monitoring light transmitting means" was first introduced in claim 1 as the "means for monitoring light". These

antecedent basis issues make the scope of the claims particularly unclear because they center around "means for" language.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 and 13-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Kittrell et al. (4913142), hereinafter Kittrell.

Regarding claims 1-5 and 13-14, these claims recite "means for generating monitoring light", "means for transmitting the monitoring light" and "means for detecting backscattered light of the monitoring light", a means for generating monitoring light, "a means for transmitting the monitoring light", "means for detecting backscattered light" and a "means for monitoring the position of an end of the welding laser transmitting" presumably to invoke 112 6th Paragraph. These elements have been interpreted accordingly; however, Examiner requests confirmation that interpretation under 112 6th Paragraph was Applicant's intention. As an aside, "welding laser generating means" is not interpreted under 112 6th Paragraph, since it is not in the "means for..." form required to invoke this interpretation. Please remove "means" language where it is not used to invoke 112 6th Paragraph.

Kittrell teaches laser cauterization methods and apparatuses (Background and Summary of the Invention). The apparatus comprising: a laser or laser generating

means such as an argon laser, or in previous treatments a NG:YAG laser (Column 3, Lines 41; Column 7, Lines 40-56; Lines Column 24, Lines 60-69), a means for transmitting the welding laser or optical fibers (20; Column 7, Lines 65-69; Figures 1-4), a means for generating monitoring light (laser or conventional source), a means for transmitting the monitoring light (20a-c) and a means for detecting backscattered light or a detector (70 and 64) such as an array of photodiodes, and a means for monitoring or a computer (80) for determining the position of an end of the welding laser transmitting means or the distance to the tissue (Column 19; Lines 35-69; Column 20, Lines 1-54). Kittrell teaches supplying diagnostic or monitoring light through a selected optical fiber (20a-c), where the light falls on the tissue and is absorbed and scattered. The light then re-enters the distal ends of the various fibers (20) where it travels to the proximal end to be analyzed by a detector (64; Column 24, Lines 17-38). Kittrell also teaches providing continuous radiation and that the laser radiation is capable of heating the vessel wall (Summary of the Invention, Column 20, Lines 30-31).

The limitations concerning when the laser is irradiated and how the position of the welding laser transmitting means is determined are merely the intended uses of the invention. These functional limitations do not add or further modify existing elements of Applicant's invention, and thus are given negligible patentable weight.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6, 7, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kittrell as applied to claims 1, 5 and 14 above, and further in view of Marchitto et al. (20020016533), hereinafter Marchitto.

Regarding claims 6, 7, 15 and 16, Kittrell teaches determining the distance to the tissue based on collected optical measurements (Column 20, Lines 1-54). However, Kittrell doesn't teach specifically irradiating the tissue with the specific wavelengths claimed or using wavelengths that specifically are absorbed by hemoglobin. Attention is directed to Marchitto who teaches an optical imaging technique that can be used with medical treatments (Abstract), such as cauterizing a vessel (Paragraph [0062]). Marchitto teaches using the Nd:YAG laser that emits pulses at 532 nm to be absorbed by blood (Paragraph [0040]), and specifically by hemoglobin (Paragraphs [0029] and [0033]). The light reflected or re-emitted from the blood is then collected and analyzed to distinguish between tissues or image the region (Paragraphs [0033] and [0036]). It would have been obvious to use wavelengths that are absorbed by hemoglobin to determine the position of the device because the absorption spectrum of hemoglobin is unique when compared to myoglobin (found in tissues, muscles and vessel walls) and thus provides a good blood/tissue contrast or a good signal to noise ratio (Paragraph [0033]).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pesach (20060122583) teaches a laser revascularization method

and apparatus. Yassinzadeh (20080065064) teaches an apparatus and method for closing vascular penetrations.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY B. LIPITZ whose telephone number is (571)270-5612. The examiner can normally be reached on Monday to Thursday, 10 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry M. Johnson III can be reached on (571)272-4768. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JEFFREY B LIPITZ/
Examiner, Art Unit 3769

/Henry M. Johnson, III/
Supervisory Patent Examiner, Art
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